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Anxiety levels of science teachers about organizing trips to out-of-school learning environments

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Abstract

This study aims to examine the anxiety levels of science teachers about organizing trips to out-of-school learning environments and the variables (gender, professional seniority, participation in out-of-school learning activities, organizing out-of-school learning activities, frequency of organizing out-of-school learning activities, and receiving education about out-of-school learning) that are thought to impact these concerns. The participants of the research designed by the "Survey method" were 163 science teachers who were actively serving in state or private schools in different provinces of Turkey. The 'teacher anxiety scale for organizing trips to out-of-school learning environments' consisting of 28 items developed by Arık and Bozdoğan (2022) was used to collect the data of the research. Cronbach Alpha reliability coefficient of the whole measurement tool which consists of four sub factors of "Bureaucracy-related anxiety", "safety risks-related anxiety", "harm-related anxiety" and "pedagogy-related anxiety" is 0.944. Cronbach Alpha reliability coefficients of the sub factors of the measurement tool are 0.868, 0.922, 0.903 and 0.952, respectively. The data of the study were analyzed through the basic statistical analysis, t-test for independent groups, one way variance analysis (ANOVA), Levene and Tukey tests. The results of the research show that the anxiety levels of science teachers about organizing trips to out-of-school learning environments were moderate. In addition, as a result of the research, it was determined that the anxiety levels of science teachers about organizing trips to out-of-school learning environments showed a statistically significant difference, according to gender, professional seniority, organizing out-of-school learning activities, and frequency of organizing out-of-school learning activities.

Keywords: Science teachers; anxiety about organizing trips to out-of-school learning environments; survey method; demographic variables

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1. Introduction

1.1. Introduce the problem

One of the important issues of behavioral and cognitive theories is learning, which means gaining knowledge. Although it is not possible to make a universal definition of learning (Shuell, 1986), learning can be defined as "relative constant changes in behaviors or behavior repertoire as a result of the life experiences of the individual" in general. Learning is not only a verbal knowledge, but also it includes knowledge and behaviors such as habits, skills, attitudes, and conscious awareness (Terry, 2007).

There is a rapid change in today's world. This change increases the need for creative and innovative individuals who mostly question everything, control themselves, learn by themselves. For raising these individuals, besides the knowledge and experiences they obtain in the school, the knowledge and experiences they obtain outside the school are also important (Arık & Bozdoğan, 2022; Resnick, 1987). When considered that they especially spend 85% of their time outside the school, excluding sleeping time, it can be said that this period is important to determine both their school achievements and the roles they will achieve in the society in the future (Medrich, 1982).

Learning can be realized as "formal learning," which is providing some information and skills to individuals in the educational process in a specific period; it can also be naturally realized as "informal learning" as a result of the interaction of the individual with their surrounding (Laçin Şimşek, 2020). Gerber et al. (2001) described informal learning as the sum of the activities performed when individuals were not in a formal class and were not under the teacher's supervision. However, they also emphasized that informal learning may include extracurricular activities organized with the support of schools (For example, chess courses, sports activities, and artistic activities) (Gerber, Marek, et al., 2001).

Eshach (2007) stated that classifying learning as formal and informal is wrong. For example, when we consider field trips to science centers, he noted that these centers are actually non-formal learning environments but that the field trips to these centers could be highly structured, planned, and programmed visits. He also stated that during these field trips, children could perform experiments, fill in the previously prepared worksheets and follow a guide, so these field trips could be considered formal. Accordingly, except for the daily routine, these field trips to scientific centers, museums, and aquariums are pre-planned, structured, and accompanied by teachers and/or guides; So, it is appropriate to determine them as non-formal learning environments instead of informal learning environments. He noted that factors such as interest, social context, motivation, and evaluation should be considered and learning should be divided into formal, informal, and non-informal (Eshach, 2007; Tamir, 1991).

Learning is a lifelong process, either formal, informal, or non-formal. Although human beings complain that they cannot learn, they are lifelong learners. At home, at school, at work, in the park, in the garden, in the museum, in the science center, in nature, in sum, s/he will continue to learn everywhere and in any circumstances during her/his lifetime (Bozdoğan, 2016). In order for lifelong learning to become a habit and to bring twenty-first-century skills to all individuals, education should go beyond the school walls. The Organisation for Economic Co-operation and Development (OECD) (2001) reports emphasize the importance of informal learning to create human capital, as well as formal learning. Therefore, it has been stated that learning should continue in informal learning environments (OECD, 2001). As mentioned in the Ministry of National Education (MoNE) Science Curriculum (2018a), for meaningful and permanent learning, in-school and out-of-school learning environments should be designed according to the teaching strategy based on research and inquiry. For this purpose, informal learning environments such as school yards, science centers, museums, planetariums, zoos, botanical gardens, natural habitats, etc., should be utilized (MoNE, 2018a). In the 2023 Education Vision for a strong tomorrow prepared by the Ministry of National Education (2018), this statement is given to enable academic knowledge to be transformed into skills: "Natural, historical and cultural places, science-art centers, museums, and out-of-school learning environments will be used more effectively in the direction of the gains in the curriculum" (MoNE, 2018b).

Out-of-school learning environments, which are recommended to be frequently used in national and international reports in education are as follows; schoolyards and school gardens (Andersen et al., 2015; Fjortoft et al., 2009), natural habitats (forests, caves, rivers, etc.) (O'Brien, 2009), artificially created parks and gardens (zoos, ponds, dams, botanical gardens, arboretums, aquariums, etc.) (Davidson et al., 2010; Sellmann & Bogner, 2013), museums (archeology, ethnography, nature and nature history, painting, art, music, science, military museums, etc.) (Mujtaba et al., 2018; Shaby et al., 2017), centers (science, art, sport centers, etc.) (Falk & Needham, 2011; Köseoğlu et al., 2020), national parks (Brody et al., 2002), observatories and planetariums (Plummer, 2009; Sontay et al., 2016; Yu et al., 2015), various institutions and organizations (health institutions, hospitals, dialysis centers, blood centers, industrial organizations, factories, etc.), libraries (Braund & Reiss, 2006; Erich, 2018), children's universities (Öztürk & Bozkurt Altan, 2019), non-governmental organizations, mass media (newspaper, magazine, radio, television, internet, etc.), virtual reality (augmented reality) applications, and mobile learning environments (Balasubramanian et al., 2010; Efstathiou et al., 2018; Perez-Sanagustin et al., 2014; Arık & Bozdoğan, 2022; Bozdoğan, 2016; Eshach, 2007; Salmi, 1993; Howe & Disinger, 1988; Laçin Şimşek, 2020).

Science education is a discipline that can be performed in almost all out-of-school environments due to its subject areas such as living things and life, the world and the universe, the structure, characteristics, composition and nature of matter, and physical

events (MoNE, 2018c). Since science education includes abstract memorization concepts and complex formulas and has a complex and different technical language structure, students perceive this discipline to be negative (Angier, 2008). Science course teachers complain that these students, who have negative attitudes and motivation for the course, create a negative classroom atmosphere in science courses (Swarat et al., 2012; Yoon & Kim, 2017). The potential to create a fun environment of out-of-school learning environments and to provide students an opportunity to move flexibly can change the negative perception of science classes (Braund & Reiss, 2006; Taylor & Caldarelli, 2004). Out-of-school learning environments enrich the learning environment (Okur Berberoğlu & Uygun, 2013; Ramey-Gassert, 1997) and give students an opportunity for active learning by experiencing. At the same time, out-of-school learning environment activities are effective in the following cases; For students to gain daily life experience, (Ertaş et al., 2011; Tortop & Özek, 2013) that is, to acquire social roles (Jirásek, 2021), to increase their interests in classes, their internal motivations (Clarke-Vivier & Lee, 2018; Eshach, 2007; Kisiel, 2005; McLeod & Allen-Craig, 2007; Metin & Bozdoğan, 2020; Pedretti, 2002; Sturm & Bogner, 2010) and self-confidence towards learning (Bozdoğan, 2007, 2016; McLeod & Allen-Craig, 2007; Melber & Abraham, 1999), to create a positive attitude towards courses and the subject (Eshach, 2007; Tortop & Özek, 2013), to increase the permanence of academic success and knowledge (Bakioğlu et al., 2018; Balkan Kıyıcı & Atabek Yiğit, 2010) by supporting education in formal learning environments (Bozdoğan & Yalçın, 2006; Gerber, Cavallo, et al., 2001; Metin & Bozdoğan, 2020; Sturm & Bogner, 2010; Taş & Gülen, 2019).

The effect of education in out-of-school learning environments on learning depends on the planned and programmed education. The highest responsibility for this education is on the teachers. Therefore, teachers must plan and conclude the trips to the out-of-school learning environments and successfully conduct the process. When the literature is reviewed, it is stated that the curriculum should be planned according to the subjects and gains in the field trips to out-of-school learning environments (Bowker & Tearle, 2007; Bozdoğan et al., 2015; Kisiel, 2005; R. Tal et al., 2005). However, due to the difficulties the teachers experience while organizing trips to out-of-school or planning preschool education, (Bozdoğan, 2016; Pekin & Bozdoğan, 2021; T. Tal & Morag, 2009), they generally do not prefer to conduct education in out-of-school learning environments (Carrier, 2009; Coughlin, 2010; Haynes et al., 2005; Moseley et al., 2002).

The main reason that teachers do not prefer not to conduct in out-of-school learning environments is that the field trips to these environments are limited to time and budget and difficult to organize. This may create anxiety that prevents learning in teachers (Coughlin, 2010; Haynes et al., 2005). At the same time, difficulties related to bureaucracy, guidance, and pedagogical difficulties may also be experienced during these trips (Arık & Bozdoğan, 2022). Teachers may not have sufficient self-efficacy levels in planning these trips. This may also cause teachers not to play active roles during trips,

be incapable of directing students, and be concerned about students' safety (Bozdoğan, 2016).

The problems teachers may encounter in the education to be conducted in out-of-school learning environments, their pedagogical deficiencies, and the lack of self-confidence can cause negative attitudes, emotions, thoughts, even stress, anxiety, and fear toward out-of-school learning environments in teachers (Bozdoğan, 2018; Pekin & Bozdoğan, 2021; Tatar & Bağrıyanık, 2012; Uğurlu, 2022; Üner, 2019).

Anxiety refers to the danger that could occur in the future. It consists of cognitive components (concerns, worries, or handling tough situations), as well as physiological components (sweating, insomnia, decision-making problems) (American Psychiatric Association, 2018). Another definition defines anxiety as the natural reaction of the individual to protect herself/himself in the face of a situation threatening her/his life. It is mostly likened to fear. However, it can be distinguished from fear because the source of anxiety is known (Budak, 2005). Spielberger (1972) described anxiety as "negative feelings such as sadness, perception, and tension caused by stress-creating situations, and their observable effects." He expressed anxiety as "perhaps the most common reaction to stress" (Spielberger, 1966, 1972). According to the theory of Spielberger (1966), anxiety can be examined in two ways: state and trait anxiety. If an individual is anxious throughout her/his life, it is "trait anxiety"; If s/he perceives a particular situation as a threat and reacts emotionally, it is "state anxiety" (Spielberger, 1966). The anxiety levels of science teachers about the trips to be organized for out-of-school learning environments can be expressed as state anxiety (Arık & Bozdoğan, 2022). The anxiety levels about bureaucracy, security risk, harm status, and pedagogy-related problems and the effects of these tense situations will be investigated during this study. The frequency and intensity of anxiety are effective in success. Mild-level anxiety can increase success by directing individuals to be more careful, while high-level anxiety may affect success negatively (Yılmaz & Ocakçı, 2010). No study examined science teachers' concerns about organizing trips to out-of-school learning environments was found in the literature. However, Üner (2019) and Arık and Bozdoğan (2022) developed an anxiety scale for out-of-school learning environments in their studies. In addition, Uğurlu (2022) examined the anxiety levels of classroom teachers and the demographic variables (gender, school type, and socioeconomic characteristics of their places of duty) that are thought to affect these levels.

When the literature was reviewed, it was seen that no study examined whether the science teachers' anxiety levels about organizing trips to out-of-school learning environments showed significant differences according to gender. However, in his study, Uğurlu (2022) investigated whether the anxiety levels of classroom teachers' out-of-school learning environments show significant differences according to gender and concluded that there is no significant difference according to gender. However, there are findings in

the studies on anxiety in the literature in contrast with the study of Uğurlu (2022). Women and men have different stressful lives. It is known that women's stress levels is generally higher than men's stress. It can be stated that gender differences are related to cultural norms (Georgas & Giakoumaki, 1984; Holmes & Rahe, 1967; Morton et al., 1997). In addition, it can be said that women learn to be more anxious from their environment. Therefore, due to the physiological-based phenomena of women, they may have a higher level of anxiety than men in stressful events (Morton et al., 1997, cited from Frankenhaeuser, 1980). In this direction, it is important to examine the effect of gender on the total anxiety score for organizing trips to out-of-school learning environments. In this study, the total anxiety scores of female science teachers and male science teachers about organizing trips to out-of-school learning environments are expected to vary significantly.

Good planning, programming, implementation, and evaluation should be made to succeed in the education provided in out-of-school learning environments. In addition, this education should be adequately associated with the curriculum (Bowker & Tearle, 2007; Bozdoğan, 2012; Kisiel, 2005; Laçin Şimşek, 2020; R. Tal et al., 2005). Teachers have a great responsibility in this process (Bozdoğan, 2016). However, it is seen that teachers have bureaucratic processes-related, pedagogical knowledge-related, security risks-related, and harm-related (students' giving harm to each other or others) anxiety levels (Arık & Bozdoğan, 2022; Pekin & Bozdoğan, 2021; Tatar & Bağrıyanık, 2012). The main reason for teachers' pedagogical anxiety levels may be professional seniority and their education. The security risks that may occur in out-of-school learning environments may be because teachers do not examine the out-of-school learning environment in advance. And they do not know the security risks that may arise there and how they will intervene when they face any security problems (Atmaca, 2012). Teachers experienced in the out-of-school learning environment can ensure the environment's security by making risk assessments in advance in these environments (Sarıoğlan & Küçüközer, 2017; Türkmen, 2010). Naturally, teachers who have not received education about out-of-school learning environments and who do not have any experience are worried about the safety risks that will occur in these environments. Bureaucratic processes are one of the processes which teachers may encounter in the whole education process. These processes can be affected by the professional seniority of teachers. Teachers with high professional seniority can easily overcome these issues because they have an experience with bureaucratic procedures. At the same time, teachers who have previously organized trips to out-of-school learning environments can solve these processes more quickly because they have experienced similar processes before. In this case, teachers with experience in professional seniority and out-of-school learning environments are expected to have less anxiety about bureaucratic processes than others. Students' harming each other, themselves, materials and spiritual works in the environment is a classroom management problem. Experienced teachers with more professional seniority encounter

classroom management problems less than inexperienced teachers (Tatar & Bağrıyanık, 2012). In addition, teachers who have experienced out-of-school learning and who have previously organized trips to out-of-school learning environments can take measures for these risks in advance. It is known that the teachers, who are experienced in out-of-school learning environments, and with more working experiences, have higher self-efficacy levels (Demir & Çetin, 2022; Sontay & Karamustafaoğlu, 2017). In this context, it is expected that teachers who have high professional seniority, who have participated in trips to out-of-school learning environments, or who have organized such trips and who have been trained for out-of-school learning environments should have lower anxiety levels. The studies conducted in the literature proposed to provide training about out-of-school learning environments for pre-service teachers during the undergraduate period, and for teachers during the in-service training process (Sarıoğlan & Küçüközer, 2017; Tatar & Bağrıyanık, 2012). In this direction, the study examined whether the total anxiety scores of science teachers about organizing trips to out of school learning environments showed statistically significant difference according to the professional seniority, the participation of out-of-school learning activities, the organizing out-of-school learning activities, the frequency of organizing out-of-school learning activities, and the receiving education about out-of-school learning.

Out-of-school learning activities are essential in preparing children for lifelong learning and laying the foundation for their future societal roles. For this reason, science teachers should not be concerned about organizing trips to out-of-school learning environments and conducting education. When the Science Course Curriculum is reviewed, it is seen that it has primary objectives that require using informal learning environments: "To ensure students to take responsibility for daily life problems, and to help them use the scientific knowledge, scientific process skills, and other life skills in solving these problems," and "to arouse interest and curiosity about the events that occurred in nature and its immediate surroundings, and to develop an attitude" (MoNE, 2018a). In order to achieve these primary objectives expressed in the curriculum and to direct science teachers to organize trips to out-of-school learning environments, the anxiety levels of science teachers about organizing trips to out-of-school learning environments should be determined, as well as the factors that are thought to affect this anxiety level. However, when the literature is reviewed, it is seen that no study analyzed the science teachers' anxiety levels about organizing trips to out of school learning environments, and the factors affecting it. Therefore, it can be said that this study will contribute to the literature to determine the science teachers' anxiety levels about organizing trips to out-of-school learning environments.

1.2. Purpose of the research

This study aims to determine the anxiety levels of science teachers about organizing trips to out-of-school learning environments and to examine the variables that are thought to affect these anxiety levels. The answers to the following research questions were sought in accordance with the aim of the study:

1. What are the anxiety levels of science teachers about organizing trips to out-of-school learning environments?

2. Do the total anxiety scores of science teachers about organizing trips to out-of-school learning environments statistically differ according to, i) gender, ii) professional seniority, iii) participation in the out-of-school learning activities, iv) organizing out-of-school learning activities, v) frequency of organizing out-of-school learning activities, and vi) receiving education for out-of-school learning?

2. Method

2.1. Research design

This research is designed according to the "descriptive survey" model. The survey design allows researchers to quantitatively define the tendencies, attitudes, and thoughts of the population, or tests the relationship between the variables of a population by examining a sample of this population (Creswell & Creswell, 2018). In this study, descriptive survey design was used as it was aimed to quantitatively define the anxiety levels of science teachers about organizing trips to out of school learning environments and determine the variables thought to affect this level of anxiety. Additionally, the survey design was chosen as the research design because it is economical and helps to provide quick responses in data collection.

2.2. Research sample and sampling procedures

The sample of this study was determined through the snowball sampling method. In this sampling method, first of all, the first participants are identified, then these participants determine the other participants of the research (Erkuş, 2009). In this study, snowball sampling method was used to ensure the variety of participants. The sample of the study consisted of 163 Science teachers who were teaching in different regions of Turkey in the spring semester of 2021-2022 academic year. The descriptive statistics results about the participants in the study sample is presented in Table 1

Table 1. Descriptive statistics about Study Group

Demographic Variables		n	%
Gender	Female	118	72.4
	Male	45	27.6
Year of Professional Seniority	0-10 years	101	62.0
	10 years and above	62	38.0
Type of school	Public School	139	85.3
	Private School	24	14.7
Participation in the Out-Of-School Learning Activity	Yes	129	79.1
	No	34	20.9
Organizing Out-Of-School Learning Activity	Yes	50	30.7
	No	113	69.3
Status of Receiving Education for Out-Of-School Learning	Yes	37	22.7
	No	126	77.3
Frequency of Organizing Out-Of-School Learning Activities	None	93	57.1
	Once a year	37	22.7
	Two or more per year	33	20.2

When Table 1 is reviewed, it is determined that 118 (72.4%) of the participants are female and 45 (27.6%) of them are male and all of them are science teachers and their age average is 32.7. It is seen that 101 (62.0%) teachers have 0-10 years of work experience and 62 (38.0%) of them have 10 years and above work experience. 139 (85.3%) of the participants work in public schools and 24 (14.7%) of them work in private schools. 129 (79.1%) participants participated in some out-of-school learning activities, while 34 (20.9%) participants did not. 50 (30.7%) of the participants organized out-of-school learning activities, while 113 (69.3) participants did not organize any out-of-school learning activities. 37 (22.7%) of the participants received at least one training about out-of-school learning. 126 (77.3%) participants did not receive any training for out-of-school learning. While 93 (57.1) of the participants did not organize any out-of-school learning activities, 37 (22.7) organized an out-of-school learning activity once a year, and 33 (20.2%) organized two or more out-of-school learning activities a year.

2.3. Data collection tool

The data of the study were collected through the "Teacher Anxiety Scale for Organizing Trips to Out-of-School Learning Environments'" developed by Arık and Bozdoğan (2022). The scale formed by 28 items in five Likert types consists of four sub factors: "Bureaucracy-Related (BR) Anxiety", "Safety Risks-Related (SRR) Anxiety", "Harm-Related (HR) Anxiety", and "Pedagogy-Related (PR) Anxiety". Minimum 28 and maximum 140 points can be obtained from the measurement tool. The Cronbach-Alfa reliability coefficient for the entire measurement tool is 0.944. The Cronbach Alpha reliability coefficient regarding the sub -factors of the measurement tool is, BR anxiety =

0.868; SRR anxiety = 0.922; HR anxiety = 0.903 and PR anxiety = 0.952, respectively. As a result of the reliability analysis conducted within the scope of this research, it is determined as 0.930 regarding the sum of the measurement tool; The Cronbach Alpha reliability coefficient regarding the sub -factors of the measurement tool is, BR anxiety = 0.884; SRR Anxiety = 0.943; HR Anxiety = 0.907 and PR Anxiety = 0.944, respectively. The fact that these reliability values are greater than 0.70 is the evidence of the reliability of the measurement tool (DeVellis, 2012).

2.4. Data analysis

The conformity of the dataset to the normal distribution was determined to detect the quantitative analysis methods obtained from the research. In the direction of this purpose, IBM SPSS 20.0 was examined by the skewness and kurtosis values of the dataset. The skewness value of the entire measurement tool is 0.36, and the kurtosis value is 0.51. The values related to demographic variables are as follows: gender (skewness: 1.01; kurtosis: -0.99), professional seniority (skewness: 0.33; kurtosis: -1.04), participation in out-of-school learning activities (skewness: 1.45; kurtosis: 0.10), organizing out-of-school learning activity status (skewness: -0.85; kurtosis: -1.30), out-of-school learning activity frequency (skewness: 0.77; kurtosis: -1.02), and receiving education for out-of-school learning (skewness: -1.32; kurtosis: - 0.27). The fact that these obtained values are between ± 1.5 indicates that the distribution of the dataset is normal (Tabachnick, & Fidell, 2013). In this respect, since the dataset shows the normal distribution, basic statistical data such as percentage, frequency, average, and standard deviation values, T-test for independent groups, one-way analysis of variance (ANOVA), Levene, and Tukey tests were used. The $p<.05$ significance value was considered while evaluating the data in the research. In the evaluation of Hedges' g values, .20, .50 and .80 cutoff points have been taken into consideration. Accordingly, values below zero refer to the inverse effect, the values less than .20 refer to the neutral effect, the values between .20 and .50 refer to the minor effect, the values between .50 and .80 refer to the medium, and the values above .80 refer to the major effect (Cohen, 2013).

3. Results

In this section, the answers to two research questions were sought in order to determine the anxiety levels of science teachers about organizing trips to out of school learning environments and to examine the variables thought to affect this level of anxiety. The findings obtained in this direction are given below.

3.1. Findings on the anxiety levels of science teachers about organizing trips to out of school learning environments

To answer the research question of "What are the anxiety levels of science teachers about organizing trips to out-of-school learning environments?", the teacher anxiety scale for organizing trips to out-of-school learning environments and the descriptive findings obtained from the sub-factors of this measurement tool are given in Table 2.

Table 2. Descriptive findings obtained from the sub-factors of the measurement tool

Measurement tool and sub-factors	n	Min.	Max.	Mean	Std. Dev.
The Teacher Anxiety Scale for Organizing Trips to Out-Of-School Learning Environments (TAS-OTOSLE)	163	36.00	140.00	84,04	19,32
BR Anxiety	163	6.00	30.00	20.56	6.02
SRR Anxiety	163	4.00	20.00	17.02	3.70
HR Anxiety	163	4.00	20.00	14.72	4.44
PR Anxiety	163	14.00	70.00	31.74	12.25

When Table 2 is reviewed, it is seen that the total score of science teachers' regarding the teacher anxiety scale for organizing trips to out-of-school learning environments is 36 as the minimum and 140 as the maximum. The average total score is 84.04 on the scale. The total scores for the sub-factors of the measurement tool are determined as 20.56 for BR anxiety, 17.02 for SRR anxiety, 14.72 for HR anxiety, and 31.74 for PR anxiety, respectively.

3.2. Findings regarding demographic variables that are thought to affect the anxiety levels of science teachers about organizing trips to out-of-school learning environments

The findings obtained from the independent samples t-test to answer the research question of "Do the total anxiety scores of science teachers about organizing trips to out-of-school learning environments show a statistically significant difference according to gender?" are given in Table 3.

Table 3. Findings obtained from the independent samples t-test regarding the gender variable

Measurement tool and sub-factors	Gender	n	Mean	Std. Dev.	t	p	95% Confidence Interval (CI) (min. ; max.)
TAS-OTOSLE	Female	118	86.43	19.787	2.602	.01	2.09;15.22
	Male	45	77.78	16.651			
BR Anxiety	Female	118	21,10	5.991	1,881	.06	-.10; 4,04
	Male	45	19,13	5.926			
SRR Anxiety	Female	118	17.48	3.196	2.176	.03	.13; 3.13
	Male	45	15.84	4.622			
HR Anxiety	Female	118	15.18	4.351	2.165	.03	.15; 3.19
	Male	45	13.51	4.506			
PR Anxiety	Female	118	32.68	12.345	1.587	.12	-.83; 7.61
	Male	45	29.29	11.776			

When Table 3 is reviewed, it is seen that the total anxiety scores of science teachers about organizing trips to out-of-school learning environments show a statistically significant difference according to gender (t(161)=2.602, p=.01<.05). It was determined that there was a significant difference between female teachers ($\bar{X}$=86.432, p= 19.787) and male teachers ($\bar{X}$= 77.778, p= 16.651). In this case, it can be stated that female science teachers have higher anxiety levels about organizing trips to out-of-school learning environments. The obtained Hedges' g value (g= 0.46) indicates that there is a minor level of effect size. It has been determined that there is a statistically significant difference in the sub-factors of SRR anxiety (t(60.76)= 2.176, p= .03 <.05) and HR anxiety (t(161)= 2.165, p= .03 <.05) that constitute the measurement tool in favor of female teachers. However, there is no statistically significant difference in the sub-factors of BR anxiety (t(161)= 1,881, p= .06> .05), and PR anxiety (t(83.12)= 2.602, p= .12> .05).

The findings obtained from the independent samples t-test to answer the research question of "Do the total anxiety scores of science teachers about organizing trips to out-of-school learning environments show a statistically significant difference according to the variable of professional seniority?" are given in Table 4.

Table 4. Findings obtained from the independent samples t-test regarding the variable of professional seniority

Measurement tool and sub-factors	Professional Seniority	n	Mean	Std. Dev.	t	p	95% CI (min. ; max.)
TAS-OTOSLE	0-10 years	101	86.48	20.182	2.073	.04	0.30; 12.49
	10 years and above	62	80.08	17.248			
BR Anxiety	0-10 years	101	20.69	5.897	.364	.72	-1.57; 2.28
	10 years and above	62	20.34	6.257			
SRR Anxiety	0-10 years	101	17.13	3.759	.457	.65	-0.91; 1.46
	10 years and above	62	16.86	3.634			
HR Anxiety	0-10 years	101	15.21	4.357	1.810	.07	-0.12; 2.69
	10 years and above	62	13.92	4.502			
PR Anxiety	0-10 years	101	33.45	13.452	2.492	.01	0.93; 8.03
	10 years and above	62	28.97	9.442			

When Table 4 is reviewed, it is seen that the total anxiety scores of science teachers about organizing trips to out-of-school learning environments show a statistically significant difference according to the "professional seniority" (t(161)=2.073, p=.04<.05). There is a significant difference in favor of teachers with less than 10 years of work experience ($\bar{X}$=86.48, s=20.182) than the ones with 10 years and above of work experience ($\bar{X}$=80.08, s=17.248). In this case, it can be stated that the more professional experience science teachers have, the less anxiety levels they have about organizing trips

to out-of-school learning environments. The obtained Hedges' g value (g= 0.34) indicates that there is a minor level of effect size. While there is a significant difference determined in the sub-factor of PR anxiety (t(158.05)=2.492, p=.01<.05) that constitutes the scale in favor of the teachers with less than 10 years of work experience; no statistically significant difference was found in the sub-factors of BR anxiety (t(161)=0.364, p=.72>.05), SRR anxiety (t(161)=.457, p=.65>.05) and HR anxiety (t(161)= 1.810, p=.07>.05).

The findings obtained from the independent samples t-test to answer the research question of "Do the total anxiety scores of science teachers about organizing trips to out-of-school learning environments show a statistically significant difference according to the variable of participation in the out-of-school learning activities?" are given in Table 5.

Table 5. Findings obtained from the independent samples t-test regarding the variable of participation in the out-of-school learning activities

Measurement tool and sub-factors	Participation in the Out-of-School Learning Activity	n	Mean	Std. Dev.	t	p	95% Confidence Interval (CI) (min. ; max.)
TAS-OTOSLE	Yes	129	83.53	18.680	-.663	.51	-9.840; 4.894
	No	34	86.00	21.755			
BR Anxiety	Yes	129	20.62	5.918	.255	.80	-2.002; 2.595
	No	34	20.32	6.479			
SRR Anxiety	Yes	129	17.02	3.483	-.009	.99	-1.420; 1.408
	No	34	17.03	4.502			
HR Anxiety	Yes	129	14.57	4.303	-.806	.42	-2.385; 1.003
	No	34	15.26	4.974			
PR Anxiety	Yes	129	31.31	11.576	-.877	.38	-6.739; 2.594
	No	34	33.38	14.602			

When Table 5 is reviewed, it is seen that the total anxiety scores of science teachers about organizing trips to out-of-school learning environments did not show statistically significant differences according to their participation in out-of-school learning activities (t(161)=-.663, p=.51>.05). The sub-factors of BR anxiety (t(161)= .255, p=.80>.05), SRR anxiety (t(161)= -009, p=.99>.05), HR anxiety (t(161)=-806, p=.42>.05) and PR anxiety (t(161)=-877, p=.38>.05) that constitute the scale did not show statistically significant differences according to the participation in out-of-school learning activities.

The findings obtained from the independent samples t-test to answer the research question of "Do the total anxiety scores of science teachers about organizing trips to out-of-school learning environments show a statistically significant difference according to the variable of organizing out-of-school learning activities?" are given in Table 6.

Table 6. Findings obtained from the independent samples t-test regarding the variable of organizing out-of-school learning activities

Measurement tool and sub-factors	Organizing Out-Of-School Learning Activity	n	Mean	Std. Dev.	t	p	95% Confidence Interval (CI) (min. ; max.)
TAS-OTOSLE	Yes	50	77.78	16.527	-2.812	.00	-15.38; -2.69
	No	113	86.81	19.873			
BR Anxiety	Yes	50	18.28	5.983	-3.312	.00	-5.25; -1.33
	No	113	21.57	5.780			
SRR Anxiety	Yes	50	17.00	3.435	-.056	.95	-1.28; 1.21
	No	113	17.03	3.831			
HR Anxiety	Yes	50	14.20	4.454	-.989	.32	-2.24; .74
	No	113	14.95	4.440			
PR Anxiety	Yes	50	28.30	10.361	-2.422	.02	-9.01; -.92
	No	113	33.27	12.744			

When Table 6 is reviewed, it is seen that the total anxiety scores of science teachers about organizing trips to out-of-school learning environments show a statistically significant difference according to their organizing out-of-school learning activities (t(161)=-2.812, p=.00<.05). It has been determined that there is a significant difference between the anxiety levels of the teachers who organized out-of-school learning activities ($\bar{X}$=7.78, s=16.527) and the ones who did not ($\bar{X}$=86.81, s=19.873) in favor of the teachers who organized out-of-school learning activities. In this case, it can be stated that the anxiety levels of the science teachers who organized out-of-school learning activities are lower than the teachers who did not. The obtained Hedges' g value (g= 0.48) indicates that there is a minor level of effect size. While there is a significant difference in the sub-factors of BR anxiety (t(161)= -3.312, p=.00<.05) and PR anxiety (t(161)=-2.422, p=.02<.05) that constitute the scale in favor of the teachers who organized out-of-school learning activities; there is no statistically significant difference found in the sub-factors of SRR anxiety (t(161)=-.056, p=.95>.05) and HR anxiety (t(161)=-.989, p=.32>.05).

As a result of the Levene test conducted to answer the research question of "Do the total anxiety scores of science teachers about organizing trips to out-of-school learning environments show a statistically significant difference according to the variable of frequency of organizing out-of-school learning activities?", the assumption of the homogeneity of variance has been accepted (p=.363>.05). The findings obtained from the "One-Way ANOVA" in this direction are given in Table 7.

Table 7. Findings obtained from the One-Way ANOVA regarding the variable of frequency of organizing out-of-school learning activities

Measurement tool and sub-factors	Frequency of Organizing Out-Of-School Learning Activities	n	$\bar{X}$	s	F	p	TUKEY test
TAS-OTOSLE	None	93	88.50	19.915	6.627	.00	None - Two or more per year
	Once a year	37	80.11	15.643			
	Two or more per year	33	75.89	18.138			

BR Anxiety	None	93	21.97	5.576	7.079	.00	None - Two or more per year
	Once a year	37	19.46	6.067			
	Two or more per year	33	17.82	6.141			
SRR Anxiety	None	93	17.53	3.543	3.159	.04	None - Two or more per year
	Once a year	37	16.97	3.539			
	Two or more per year	33	15.67	4.075			
HR Anxiety	None	93	15.27	4.436	3.394	.03	None - Two or more per year
	Once a year	37	14.897	3.9006			
	Two or more per year	33	12. 97	4.714			
PR Anxiety	None	93	33.74	12.767	2.981	.05	-
	Once a year	37	28.78	11.414			
	Two or more per year	33	29.42	10.820			

When Table 7 is reviewed, as a result of the "One-Way ANOVA," it is seen that the total anxiety scores of science teachers about organizing trips to out-of-school learning environments show a statistically significant difference according to the frequency of their organizing out-of-school learning activities ($F(2, 160)=6.627$; $p=.00>.05$). This difference is in favor of the teachers who did not organize out-of-school learning activities ($\bar{X}=88.50$, $s=19,915$) than the ones who organized them two or more in a year ($\bar{X}=75.89$, $s=18.138$). In this case, it can be stated that the anxiety levels of science teachers who organized out-of-school learning activities are lower than those of teachers who never did. The obtained Hedges' g value ($g= 0.65$) indicates that there is a medium level of effect size. In the sub-factors of BR anxiety ($F(2, 160)=7.079$; $p=.00>.05$), SRR anxiety ($F(2, 160)= 3.159$; $p=.04>.05$) and HR anxiety ($F(2, 160)=3.394$; $p=.03>.05$) that constitute the scale, there is a significant difference in favor of the teachers who did not organize out-of-school learning activities than the teachers who organized them two or more in a year; while there is no statistically significant difference in the sub-factor of PR anxiety ($F(2, 160)=2.981$; $p=.05=.05$).

The findings obtained from the independent samples t-test to answer the research question of "Do the total anxiety scores of science teachers about organizing trips to out-of-school learning environments show a statistically significant difference for the variable of receiving education for out-of-school learning?" are given in Table 8.

Table 8. Findings obtained from the independent samples t-test regarding the variable of receiving education for out-of-school learning

Measurement tool and sub-factors	Status of Receiving Education for Out-Of-School Learning	n	Mean	Std. Dev.	t	p	95% Confidence Interval (CI) (min. ; max.)
TAS-OTOSLE	Yes	37	79.703	16.328	-1.561	.12	-12.716; 1.487
	No	126	85.318	19.990			
BR Anxiety	Yes	37	19.35	6.106	-1.391	.17	-3.778; .655

	No	126	20.91	5.972			
SRR Anxiety	Yes	37	15.76	3.825	-2.403	.01	-2.988; -.292
	No	126	17.40	3.598			
HR Anxiety	Yes	37	14.11	4.446	-.949	.34	-2.430; .853
	No	126	14.90	4.445			
PR Anxiety	Yes	37	30.49	8.831	-.872	.39	-5.326; 2.077
	No	126	32.11	13.091			

When Table 8 is reviewed, it is seen that total anxiety scores of science teachers about organizing trips to out-of-school environments did not show significant difference according to receiving education about out-of-school learning (t(161)=-1.561, p=.12>.05). While there is a significant difference in the SRA sub-factor that constituted the measurement tool in favor of the ones who did not receive education, there is no statistically significant difference in the sub-factors of BA (t(161)= -1.391, p=.17>.05), HA (t(161)=-.949, p=.34>.05) and PA (t(87.02)= -.872, p=.39>.05).

4. Discussion and conclusions

This study aimed to determine the anxiety levels of science teachers about organizing trips to out-of-school learning environments and to examine these anxiety levels according to various variables. When the findings obtained in this direction were examined, it was determined that the minimum score, those science teachers received from the teacher anxiety scale for organizing trips to out-of-school learning environments, was 36, and the maximum score was 140. Moreover, it was determined that the average score science teachers received on the teacher anxiety scale for organizing trips to out-of-school learning environments was 84.04. It can be stated that science teachers are neither anxious nor unconcerned about organizing trips to out-of-school learning environments. However, when the anxiety levels about the sub-factors constituting the measurement tool are examined, the average score of BR anxiety is 20.56; SRR anxiety average score is 17.02; The average score of HA is 14.72, and PR anxiety average score is 31.74. The anxiety levels of science teachers about bureaucracy are above the medium level; that is, the science teachers have concerns about bureaucracy to organize trips to out-of-school learning environments. On the other hand, science teachers' safety risks-based anxiety levels are high due to security risks; that is, science teachers are extremely worried about security risks when organizing trips to out-of-school learning environments. The science teachers' harm-related anxiety levels are above the medium level; that is, science teachers have harm-related anxiety levels regarding organizing trips to out-of-school learning environments. On the other hand, it can be noted that science teachers' pedagogy-related concerns are below the medium level; that is, they are unconcerned about pedagogy to organize trips to out-of-school learning environments. When the literature was reviewed, it was seen that no study

examined the anxiety levels of science teachers toward organizing trips to out-of-school learning environments. However, in his study, Uğurlu (2022) examined the classroom teachers' anxiety levels about out-of-school learning. As a result of the research, he determined that classroom teachers have partially concerns about out-of-school learning environments, similar to this study's results. Teachers' anxiety levels about out-of-school learning environments may be related to the problems they may encounter in out-of-school learning environments and their self-efficacy levels. When the literature was reviewed, it was determined that teachers are inadequate in planning and implementing trips to out-of-school learning environments and, therefore, did not benefit from out-of-school learning environments (Bozdoğan, 2007; Griffin, 1994; Kisiel, 2005, 2007; Storksdieck, 2001; T. Tal & Morag, 2009). In parallel with the results of this study, Bozdoğan (2012) stated that pre-service science teachers were concerned about security problems, time, cost, bureaucratic process, and the fact that the trip did not achieve its aims. Furthermore, similar to the results of this study, Kisiel (2005, 2007) stated that teachers' pedagogical perceptions, trip organization experiences, school status, anxiety about taking students' responsibility, and fear of controlling them formed the basis of their concerns about organizing trips to out-of-school learning environments.

For answering the second research question, the total anxiety scores of science teachers about organizing a field trip to out-of-school learning environments were examined according to various variables. As a result of the analysis of gender variables, it was concluded that the scores received from the teacher anxiety scale and the sub-factors that formed the scale for organizing trips to out-of-school learning environments and the scores received from the sub-factors (SRR anxiety and HR anxiety) show significant differences in favor of women. According to these results, it can be said that gender affected the concerns of science teachers about organizing trips to out-of-school learning environments, and their anxiety levels about security risks and harm. However, their scores on the scale from the sub-factors of BR anxiety and PR anxiety did not show significant differences according to gender. Furthermore, when the literature was reviewed, it was seen that no study examined the anxiety levels of science teachers about organizing trips to out-of-school environments according to gender. Besides, Bozdoğan (2012) stated in his research that anxiety levels about security, being unable to control the crowded classrooms, and possible accidents during field trips were higher in women than men. Additionally, although not about out-of-school learning environments, studies in the literature determine that women's anxiety levels are higher than men's (Alisinanoğlu & Ulutaş, 2003; Bozdoğan, 2012; Dong et al., 1994; Ronan et al., 1994). As a result of the research conducted with classroom teachers, Uğurlu (2022) concluded that the anxiety levels of classroom teachers about out-of-school learning environments show a significant difference according to gender, similar to the results of this study. However, contrary to this research, he found that male teachers' anxiety levels about out-of-school learning environments are higher than women. Although not about out-of-school learning

environments, Karakaya et al. (2018) found that the professional anxiety level of male pre-service science teachers is higher than that of female pre-service science teachers (Karakaya et al., 2018). These results may be related to the difference between various disciplines, the use of different measurement tools, teachers' professional seniority, and out-of-school learning experiences.

As a result of the analyzes conducted for the professional seniority variable, it was concluded that the scores science teachers received from the teacher anxiety scale and the sub-factors constituting the scale (PR anxiety) about organizing trips to the out-of-school learning environments showed a statistically significant difference in favor of teachers with less than 10 years of work experience. However, this difference, obtained according to professional seniority, was determined to be at a minor level. Additionally, it was determined that teachers' scale scores from BR anxiety, SRR anxiety, and HR anxiety sub-factors did not show significant differences according to professional seniority. When the literature was reviewed, it was seen that no study examined the anxiety levels of science teachers organizing trips to the out-of-school learning environments according to professional seniority. Nevertheless, there are studies examining the relationship between the self-efficacy perceptions and professional seniority of teachers from different disciplines toward organizing trips to out-of-school learning environments (Pas et al., 2012; Pekin & Bozdoğan, 2021; Temel & Kölemen, 2021). Similar to the results of this study, Temel and Kölemen (2021) determined that the self-efficacy beliefs regarding the ability of preschool teachers to organize trips to out-of-school environments showed significant differences compared to their professional seniority. However, in contrast to this research, Pekin and Bozdoğan (2021) concluded that there was no significant difference between teachers' self-efficacy levels in organizing trips to out-of-school learning environments and their professional seniority. Professional seniority is an essential variable for the development of teachers. However, it is not enough alone. Teachers should be supported by providing in-service training in the teaching process. If a teacher has not been trained for out-of-school learning environments, has not participated in trips organized to out-of-school learning environments, and has not organized a field trip to out-of-school learning environments, it may not be possible for her/him to reduce her/his anxiety no matter how much her/his professional experience is.

As a result of the analyzes conducted for the variable of participation in out-of-school learning activities, it was concluded that the scores science teachers received from the teacher anxiety scale and the sub-factors constituting the scale (BR anxiety, PR anxiety, SRR anxiety, and HR anxiety) about organizing trips to the out-of-school learning environments did not show a statistically significant difference. When the literature was reviewed, no study was found to examine the science teachers' anxiety levels about organizing trips to out-of-school learning environments according to the status of participating in the out-of-school learning activities. The main reason the scores of

science teachers on the teacher anxiety scale about organizing trips to out-of-school learning environments did not show significant differences in their participation in out-of-school learning activities may be related to their experiences. Because during the out-of-school learning activities, teachers did not experience checking and evaluating any bureaucratic procedures, classroom control problems, and security-based risks. In addition, they may not have developed their pedagogical knowledge in this field since they did not teach in the out-of-school learning environment. Participating in out-of-school learning activities provides the development of teachers, especially their field knowledge. However, it can be stated that participating in these activities has no effect on reducing teachers' anxiety levels about out-of-school learning environments.

As a result of the analyzes conducted for the variable of organizing trips to out-of-school learning environments, it was concluded that the scores science teachers received from the teacher anxiety scale and the sub-factors constituting the scale (BR anxiety and PR anxiety) about organizing trips to the out-of-school learning environments showed a statistically significant difference in favor of teachers who did not organize trips to out-of-school learning environments. However, it was concluded that the scores of the scale from the sub-factors of SRR anxiety and HR anxiety did not show statistically significant differences according to organizing out-of-school learning activities. According to these results, it can be said that organizing out-of-school learning activities affects the anxiety levels of science teachers about organizing trips to out-of-school learning environments, and their bureaucracy-based and pedagogy-based anxieties. As a result of the analyzes conducted for the variable of frequency of organizing out-of-school learning activities, it was concluded that the scores science teachers received from the teacher anxiety scale and the sub-factors constituting the scale (BR anxiety, SRR anxiety, and HR anxiety) about organizing trips to the out-of-school learning environments showed a statistically significant difference in favor of teachers who did not any organize out-of-school learning activities compared to the ones who organized two or more activities in a year. However, it was concluded that the scale scores from the sub-factor of PR anxiety did not show statistically significant differences according to the frequency of organizing out-of-school learning activities. Therefore, according to these results, it can be said that the frequency of organizing out-of-school learning activities affects science teachers' anxiety levels about organizing trips to out-of-school learning environments and their bureaucracy-based, security risks-based, harm-based anxieties. When the literature was reviewed, it was seen that no study examined the anxiety levels of science teachers about organizing trips to out-of-school learning environments according to the variables of organizing out-of-school learning activities and the frequency of organizing out-of-school learning activities. However, some studies in the literature determined that the frequency of teachers' organizing trips to out-of-school learning environments positively affects their self-efficacy levels (Pekin & Bozdoğan, 2021; Temel & Kölemen, 2021). Pekin and Bozdoğan (2021) stated in their study that teachers' frequency of organizing trips to out-

of-school environments increased their self-efficacy. Still, this increase did not create a significant difference. In this regard, they stated that teachers' experiences they gained during the trips caused an increase in their self-efficacy beliefs towards organizing trips. On the other hand, Temel and Kölemen (2021) concluded that teachers' self-efficacy beliefs increased in parallel with the increase in their frequency of organizing trips. Based on the results obtained from this research, it can be said that teachers' experience of organizing trips and their frequency increase their experiences. The increase in these experiences may decrease the problems they face in out-of-school learning environments and thus reduce their anxiety levels. Many studies conducted in the literature stated that pre-service teachers and teachers should gain experience in out-of-school learning during undergraduate education and in-service training (Balkan Kıyıcı et al., 2014; Bozdoğan et al., 2015; Güler, 2009; Olson et al., 2001; Tatar & Bağrıyanık, 2012). However, considering the demographic characteristics of the participants of this study, it can be said that science teachers' frequency of participation in trips, their organizing trips to out-of-school learning environments, and their frequency of organizing trips are insufficient.

As a result of the analysis conducted for the variable of receiving education about out-of-school learning, it was concluded that the scores science teachers received from the teacher anxiety scale about organizing trips to the out-of-school learning environments did not show a statistically significant difference according to receiving education about out-of-school learning. In addition, it is determined that the scores they received from the sub-factor of SRR anxiety constituting the scale show significant differences in favor of those who do not receive education for out-of-school learning; the scores from the sub-factors of BR anxiety, HR anxiety, and PR anxiety were found to show no statistically significant differences. Finally, when the literature was reviewed, it was seen that no study examined the anxiety levels of science teachers according to receiving education for out-of-school learning. Considering that only 23 %of science teachers are educated, it can be stated that teachers' education in out-of-school learning environments is very low. This situation can be explained by the fact that a compulsory course for out-of-school learning environments was not among the science teaching courses until 2017. With the amendment made in 2017, the "out-of-school learning environments in science teaching" course was added as a field education course and started to be taught as a course in 2018 VIII. semester (Council of Higher Education (CoHE), 2018), 2018). In this case, the pre-service teachers who graduated from undergraduate by taking the out-of-school learning environments class will start teaching this year. In this context, it can be said that the teachers participating in this research received out-of-school learning environments education by taking as an elective course at the undergraduate level, the graduate level, and in-service training. At the same time, the education content and whether any opportunities were given to teachers to implement it are also important. Only theory-based education may not allow teachers to gain experience. In this context, the content of

the education provided in the institutions that educate teachers has been gaining importance. The studies in the literature stated that education given by the institutions to teachers is very important for educating them about out-of-school learning environments (Anderson et al., 2003; Bozdoğan, 2012). In addition, it has been emphasized on the importance of teachers' receiving help from the academic staff about preparing for the field trips to out-of-school-environments in advance, informing students, associating these field trips with the curriculum, guidance during the field trips and directing students, and assessing the field trips afterwards (DeWitt & Osborne, 2007; R. Tal, 2004).

5. Recommendations

In accordance with the results obtained from this research, the following recommendations can be made:

• Science teachers have been determined to have had bureaucracy-based concerns. To reduce teachers' concerns, MoNE can work on reducing bureaucracy. It can also prepare a detailed directive on field trips to out-of-school learning environments. This directive can determine the limits of teacher responsibility and the regulations related to the number of counselors and specialists on duty in out-of-school environments.

• Science teachers have been determined to have had strong concerns about security risks. The main reason for this is that no risk analysis of out-of-school environments is not performed. In this context, it can be recommended that the necessary institutions should conduct risk analyses for out-of-school learning environments and determine which risk is appropriate at which learning level.

• It has been determined that science teachers have concerns that their students will harm each other and damage the objects that have material and spiritual values in the out-of-school learning environments. Therefore, it can be recommended teachers be trained on how to provide classroom management in out-of-school environments.

• The anxiety levels of female and male science teachers for organizing field trips to out-of-school learning environments differ. In future studies, the anxiety levels of female and male teachers can be examined in depth using the qualitative research method.

• It has been determined that science teachers' organizing trips to out-of-school learning environments affect their anxiety levels. In this direction, teachers can gain experience organizing trips to out-of-school learning environments in in-service training programs. Theoretical and practical training can be given in the courses of out-of-school learning at the undergraduate level. Pre-service teachers can organize trips to out-of-school learning environments.

• Within the scope of the Teaching Practice course, pre-service teachers can organize out-of-school field trips with students under the guidance of a teacher or faculty members.

• Teachers with experience in out-of-school learning can provide in-service training to inexperienced teachers.

• How to analyze the risks in out-of-school learning environments can be taught to teachers through practical in-service training related to risk analysis.

• A special promotion can be offered to the teachers who organize trips to out-of-school learning environments. Regulations can be made about teachers' service scores.

• The content of the courses about learning environments given at the undergraduate level can be examined through qualitative research methods in detail.

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